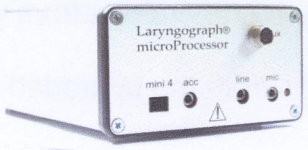
Laryngograph Ltd
Speech Studio upgrade

ISO9001:2000
ISO13485:2003
FM73968

As an existing Speech Studio user we are delighted to offer you the opportunity to upgrade your existing system with the new combined Processor and interface.

From



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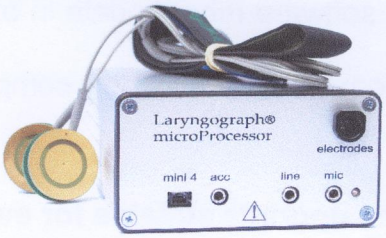
to



Why should I upgrade?

As you know the USB interface allows the software to run on a laptop PC – ideal for the community therapist or those who visit several sites. The Laryngograph Processor and interface have now been combined into the microProcessor for super portability – only this box and a laptop are required. The new microProcessor has improved Laryngograph (EGG) signal pickup and signal-to-noise ratio. It can also be supplied with a built-in nasality module for measurement of nasal wall vibration.

How much does the upgrade cost?

The upgrade price of the basic microProcessor is £600 + VAT. The nasality module can be added for a further £750 + VAT.

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What do I get with the upgrade?

Once an order has been received Laryngograph will visit on-site and replace your existing hardware with the new combined Processor – the electrodes and microphone can be reused. The latest version of the Speech Studio software will be installed and a short training session given to explain the new features.

Will my existing recordings be compatible?

The software records data in exactly the same way so recordings from your current system will be completely compatible with recordings from the upgraded system.

Is the upgrade suitable for everyone?

If you play recordings from a tape or minidisk recorder back through the Laryngograph Processor then you should not upgrade. The new microProcessor currently does not have a tape input facility.

Is the upgraded system guaranteed?

The new microProcessor will have a 12-month warranty. If you have a PC supplied by Laryngograph its warranty will be unaffected.

How do I get the upgrade?

Simply post, fax or email an official order to the Laryngograph office specifying 'microProcessor upgrade offer' at a cost of £600 plus VAT or 'microProcessor upgrade offer plus nasality module' at a cost of £1350 plus VAT. You will be contacted shortly afterwards to arrange an installation date.

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Speech Studio

Voice Measurement and Analysis

Speech Studio is Laryngograph's voice analysis system. The integrated software and hardware are specifically designed for the exacting requirements of voice measurement. The Laryngograph microProcessor provides a Laryngograph (EGG) and acoustic waveform. These input to the host PC via a highly specified USB interface to give precise analyses of sustained vowels and, uniquely, connected speech.

- Laryngograph Processor provides a Laryngograph (EGG) and Speech input.
- 4 channel high quality recording and playback.
- USB 2.0 interface allows use with desktop or laptop PC.
- Real time narrowband or broadband spectrogram.
- Real time formant display
- Continuous display of closed quotient (Qx) and fundamental frequency (Fx).
- Jitter, shimmer and HNR measurements for continuous vowels.
- Extensive library of quantitative analyses for connected speech. These work on different kinds of speech pattern including fundamental frequency, speech amplitude, vocal fold contact quotient, nasality and friction.
- Optional Nasality Processor for temporal nasalance measures.

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Specifications

Laryngograph Processor

Microphone	Omnidirectional (pressure sensitive) electret, +/- 2dB 100Hz to 10kHz noise level 26dB (SPLA), dynamic range 88dB
Laryngograph	Gold plated electrodes in small, medium and large sizes
Bandwidth	+/- 1dB, 1Hz to 10kHz
Gain	0-22.5dB, software adjustable

USB Interface

Analog inputs	4 channel, +/- 5V, 16-bit A to D, 90dB dynamic range
Sampling rate	24, 16, 12kHz
Analog outputs	Speech and Lx waveforms, 16 bit D to A, speaker or headphone compatible
PC Interface	USB 2.0

Speech Studio Software

- record speech and Laryngograph and optionally up to two more waveforms to hard disk
- real time display of waveforms, fundamental frequency (Fx), amplitude (Ax), frication, contact quotient (Qx), spectrogram and LPC spectrum.
- high quality playback
- display of fundamental frequency (Fx) and/or closed quotient (Qx)
- pattern display combining Fx, amplitude (Ax), frication and optionally nasality
- realtime acoustic spectrogram with narrowband (40Hz) or broadband (200Hz) resolution
- realtime display of formants via LPC spectrum
- Sustained vowel analysis
  - Minimum, maximum, average and SD for Fx and Qx
  - Jitter (%)
  - Shimmer (% and dB)
  - HNR (harmonic to noise ratio)
  - NNE (normalised noise equivalent)
  - RAP (relative amplitude perturbation)
- Connected speech analysis (QA)
  - First and second order frequency distribution (DFx1 and 2)
  - Pitch crossplot (CFx) with irregularity score (%)
  - First and second order closed quotient distribution (DQx1 and 2)
  - Closed quotient crossplot (CQx) with irregularity score (%)
  - First and second order amplitude quotient distribution (DAx1 and 2)
  - Amplitude crossplot (CAx) with irregularity score (%)
  - Speech pattern elements – time spent in voice, non voice, friction and nasalance (with optional Nasality Processor) (%)
  - Dynamic phonetogram – Ax vs Fx, first and second order
  - Qx vs Fx, first and second order
  - Statistics

Minimum PC specification

P4 processor, 512 MB RAM, 80GB IDE HDD, CD-RW, USB 2.0 interface, Windows XP Professional.

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Steve Please note latest software only runs under XP. preferably Professional SP2.

With Compliments

Cheers Richard.